BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Ipswich

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Produced in 2004

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

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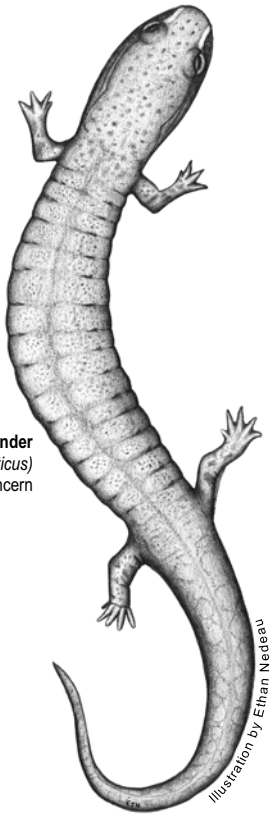
* Depending on the location of Core Habitats, your city or town may not have all of these sections.



Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.

Natural Heritage & Endangered Species Program

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
Guiding Land Conservation for Biodiversity in Massachusetts

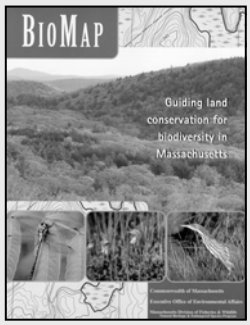
Introduction

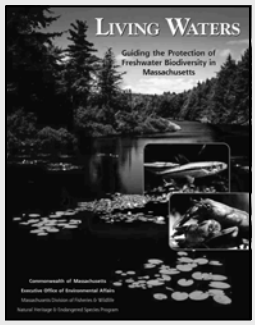
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Ipswich

Core Habitat BM12

Natural Communities

Common Name	Scientific Name	Status
Estuarine Intertidal: Salt Marsh		Vulnerable
Maritime Dune Community		Imperiled

Plants

Common Name	Scientific Name	Status
Seabeach Needlegrass	*Aristida tuberculosa*	Threatened

Invertebrates

Common Name	Scientific Name	Status
New England Siltsnail	*Cincinnatia winkleyi*	Special Concern

Vertebrates

Common Name	Scientific Name	Status
American Bittern	*Botaurus lentiginosus*	Endangered
Common Moorhen	*Gallinula chloropus*	Special Concern
Common Tern	*Sterna hirundo*	Special Concern
Eastern Spadefoot	*Scaphiopus holbrookii*	Threatened
Grassland Bird Habitat		----------
King Rail	*Rallus elegans*	Threatened
Least Bittern	*Ixobrychus exilis*	Endangered
Least Tern	*Sterna antillarum*	Special Concern
Pied-Billed Grebe	*Podilymbus podiceps*	Endangered
Piping Plover	*Charadrius melodus*	Threatened
Roseate Tern	*Sterna dougallii*	Endangered
Upland Sandpiper	*Bartramia longicauda*	Endangered
Vesper Sparrow	*Pooecetes gramineus*	Threatened

BioMap: Species and Natural Communities

Ipswich

Core Habitat BM117

Plants

Common Name	Scientific Name	Status
River Bulrush	*Bolboschoenus fluviatilis*	Special Concern

Invertebrates

Common Name	Scientific Name	Status
Coppery Emerald	*Somatochlora georgiana*	Endangered
Sensitive Rare Invertebrate		

Vertebrates

Common Name	Scientific Name	Status
Blanding's Turtle	*Emydoidea blandingii*	Threatened
Blue-spotted Salamander	*Ambystoma laterale*	Special Concern
Eastern Box Turtle	*Terrapene carolina*	Special Concern
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Grassland Bird Habitat		----------
Spotted Turtle	*Clemmys guttata*	Special Concern

Core Habitat BM150

Natural Communities

Common Name	Scientific Name	Status
Coastal Interdunal Marsh/Swale		Critically Imperiled
Estuarine Intertidal: Salt Marsh		Vulnerable
Maritime Beach Strand Community		Vulnerable
Maritime Dune Community		Imperiled

Plants

Common Name	Scientific Name	Status
American Sea-Blite	*Suaeda calceoliformis*	Special Concern
Seabeach Needlegrass	*Aristida tuberculosa*	Threatened

Vertebrates

Common Name	Scientific Name	Status
Common Tern	*Sterna hirundo*	Special Concern
Least Tern	*Sterna antillarum*	Special Concern
Piping Plover	*Charadrius melodus*	Threatened

Core Habitat BM118, BM171, BM181, BM208, BM246, BM259, and BM261

Communities

Estuarine Intertidal: Salt Marsh	Vulnerable

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BioMap: Core Habitat Summaries

Ipswich

Core Habitat BM12

This large Core Habitat encompasses some of the most important coastal wildlife habitats in Massachusetts, and is especially valuable breeding, migration, and wintering habitat for a wide variety of birds. It includes the entire undeveloped southern and central portions of Plum Island, with a continuous sandy beach and a large Maritime Dune system. Also on Plum Island are several large impounded freshwater marshes and pools that are managed for waterfowl, marsh birds, and migrating shorebirds. The Core Habitat contains part of the largest contiguous acreage of Salt Marsh in New England, which, along with the other maritime habitats here, supports a diversity of Massachusetts' rare plants and animals.

Natural Communities

This Core Habitat is part of a complex that includes the 17,000 acres of Estuarine Intertidal Salt Marsh of the Parker River. This is the largest contiguous acreage of Salt Marsh in New England. The Salt Marsh community type is a graminoid-dominated, tidally flooded coastal community with several vegetative zones. Salt Marshes form in areas subject to oceanic tides, but sheltered from wave energy. Here the size of the Salt Marsh alone assures an abundance of microhabitats and mix of conditions that are important for plants and animals alike. This Salt Marsh is surrounded by many other high-quality natural communities including barrier beaches and the entire array of tidal marshes and flats. For example this Core Habitat contains the fourth largest Maritime Dune system in the state. The Maritime Dune community consists of patches of herbaceous plants interspersed with areas of bare sand and shrubs. It occurs on windswept dunes within the salt spray zone, and often grades into shrubland or woodlands on more sheltered back dunes. Here the 900 acres of Beach Grass and Golden Heather are poorly buffered from development. This rare natural community is often heavily disturbed by human impacts and invasive plant species.

Plants

Two of the best populations of Seabeach Needlegrass in the state grow along stable dunes within this Core Habitat.

Invertebrates

This Core Habitat includes a brackish marsh along the Egypt River in Ipswich that is habitat for the rare New England Siltsnail. Several other brackish marshes that are potential habitat for the New England Siltsnail are found within this large Core Habitat.

Vertebrates

The continuous sandy beach that extends along the entire seaward side of Plum Island provides important breeding habitat for Piping Plovers and Least Terns. Small colonies of Common Terns nest on small, low, sandy islands within the broad expanses of salt marsh. These salt marshes provide regionally important breeding habitat for Sharp-tailed and Seaside Sparrows and migration habitat for rails. The estuarine channels and mudflats associated with the Parker River and Plum Island Sound provide important migration and wintering habitat for Black Ducks and other waterfowl. Several locally rare species of marsh birds, including Pied-billed Grebe, Least and American Bittern, King Rail, and Common Moorhen, use the managed freshwater impoundments on Plum Island as migration habitat and, occasionally, for breeding. Recently, Northern Harriers have nested near one of these wetlands.

This Core Habitat also contains several types of habitats used by large numbers of migrating shorebirds, especially in summer and early fall. These habitats include the beaches and intertidal flats on the ocean-facing side of Plum Island, salt pans (shallow pools) scattered through the salt marshes, and managed impoundments on Plum Island that are periodically drawn down to shallow water or exposed moist soil. Upland Sandpipers have been known to nest in managed grassy areas along the edges of the Plum Island Airport and adjacent high salt marsh. Vesper Sparrows have been known to breed in the extensive dune habitats on Plum Island. Breeding populations of Eastern Spadefoot toads are also known from the sandy areas near interdunal swales.

Core Habitat BM117

This large Core Habitat, anchored by the Willowdale State Forest, contains a mix of wetland and upland habitats that provide some of the best areas in the state for protecting viable populations of Blue-spotted Salamanders and other rare reptiles and amphibians. The area supports a robust population of the rare River Bulrush, contains key wetland habitat for rare dragonflies, and encompasses breeding and migration habitats for many types of birds. Further conservation of unprotected lands would decrease habitat fragmentation and help ensure the long-term viability of rare species in this Core Habitat.

Plants

A large, robust population of the rare River Bulrush is found within the marshes along the Ipswich River.

Invertebrates

This Core Habitat includes a large complex of bogs, swamps, and other wetlands, in western Ipswich and northeastern Topsfield, that are important habitat for rare species of dragonflies. This habitat is in close enough proximity to Core Habitat immediately to the west (Boxford State Forest and vicinity) to allow dispersal of dragonflies between these two locations.

Vertebrates

This large Core Habitat has good interspersion of wetland, riparian, and upland habitats. It includes some of the best areas in the state for protecting viable populations of Blue-spotted Salamanders, and provides significant habitat for other rare reptiles and amphibians, especially Four-toed Salamanders and Spotted Turtles. This Core Habitat also contains large tracts of breeding and migration habitat for birds of upland forests, forested wetlands, and shrublands characteristic of the southern New England Coastal Plain. Hayfields and pastures at Appleton Farms support relatively large breeding populations of Eastern Meadowlarks and Bobolinks.

Core Habitat BM150

This Core Habitat contains a wide variety of quality coastal and estuarine communities. Crane Beach is one of the state's most important nesting sites for Piping Plovers. Habitats within a coastal dune system support populations of rare plants such as Seabeach Needlegrass.

Natural Communities

This Core Habitat is part of a series that includes the 17,000 acres of Estuarine Intertidal Salt Marsh of the Parker River. This is the largest contiguous acreage of Salt Marsh in New England. The Salt Marsh community type is a graminoid-dominated, tidally flooded coastal community with several vegetative zones. Salt Marshes form in areas subject to oceanic tides, but sheltered from wave energy. Here the size of the Salt Marsh alone assures an abundance of microhabitats and mix of conditions that are important for plants and animals alike. It is surrounded by many other high-quality natural communities including barrier beaches and the entire array of tidal marshes and flats. This Core Habitat also contains a variety of good-quality, coastal, dune-associated natural communities, including over 600 acres of high-quality, windswept Maritime Dunes. The Maritime Dune community consists of patches of herbaceous plants interspersed with areas of bare sand and shrubs. It occurs on windswept dunes within the salt spray zone, and often grades into shrubland or woodlands on more sheltered back dunes. Among the dunes here are over a dozen examples of an uncommon natural community type, the Coastal Interdunal Marsh/Swale, all with varied size and composition. The Coastal Interdunal Marsh/Swale community is a graminoid- or shrub-dominated coastal community that occurs in shallow depressions between sand dunes. It occurs as part of a dune system, and the best examples are complexes of numerous swales. On the seaward side of the dunes, this Core Habitat also includes a good Maritime Beach Strand community extending for over two miles of shoreline. Maritime Beach Strand communities are sparsely vegetated, narrow, wrack-strewn areas between the line of high tide and the foredunes. They are usually part of barrier beach systems and are found seaward of any dunes, but above daily high tides.

Plants

Along the dunes, one of the state's most viable populations of Seabeach Needlegrass is found. The low and fleshy American Sea-Blite is also found along the shore.

Vertebrates

Crane Beach is one of the most important breeding sites in the state for Piping Plovers, which nest on its sandy shores and interdunal areas. Crane Beach also supports breeding colonies of Least Terns and sometimes Common Terns. This site is protected conservation land. Potential threats to nesting coastal waterbirds include habitat alteration and loss, human disturbance (including off-road vehicles and dogs), and predation. Annual protection from these threats is needed.

Core Habitat BM118, BM171, BM181, BM208, BM246, BM259, and BM261

Natural Communities

This Core Habitat is part of a complex that includes the 17,000 acres of Estuarine Intertidal Salt Marsh of the Parker River. This is the largest contiguous acreage of Salt Marsh in New England. The Salt Marsh community type is a graminoid-dominated, tidally flooded coastal community with several vegetative zones. Salt Marshes form in areas subject to oceanic tides, but sheltered from wave energy. Here the size of the Salt Marsh alone assures an abundance of microhabitats and mix of conditions that are important for plants and animals alike. It is surrounded by many other high-quality natural communities including barrier beaches and the entire array of tidal marshes and flats.

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Living Waters: Species and Habitats

Ipswich

Core Habitat LW251

Plants

Common Name	Scientific Name	Status
Water Marigold	*Megalodonta beckii*	Watch Listed

Core Habitat LW303

Invertebrates

Common Name	Scientific Name	Status
New England Siltsnail	*Cincinnatia winkleyi*	Special Concern

Living Waters: Core Habitat Summaries

Ipswich

Core Habitat LW251

A population of Water Marigold, an uncommon plant most often found in Berkshire County, has an eastern foothold in Hood Pond. Native freshwater plants like the Water Marigold are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

Core Habitat LW303

This section of the Egypt River and adjacent flats support the rare New England Siltsnail. This snail is adapted to brackish waters found here.

Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.